

The William H. Pickering Speech Reference Collection, 1959-1974

2.4 cubic feet

JPL 187

Biography

William Hayward Pickering was born in Wellington, New Zealand, on December 24, 1910. After one year at the University of New Zealand, he emigrated to the United States, enrolling at the California Institute of Technology (Caltech) in 1929. He received his Bachelor of Science degree in Electrical Engineering in 1932, his Master of Science degree in Physics in 1933, and his Doctorate in Physics in 1936, all from Caltech. He became a naturalized American citizen in February 1941. After graduation, he joined the Caltech faculty, becoming a full professor of electrical engineering in 1946. During World War II, Pickering conducted research on the absorption properties of cosmic rays with Dr. Robert A. Millikan, and investigated Japanese balloon warfare techniques for the Army Air Corps.

Pickering was invited to join the Jet Propulsion Laboratory (JPL) in 1944, on the basis of his experience in the design and use of telemetering devices. He was named chief of the Remote Control Section at JPL. Beginning in 1949, Pickering headed the Corporal and Sergeant missile programs, and in September 1954 he succeeded Louis Dunn as Laboratory Director.

In November 1957 JPL and the Army Ballistic Missile Agency were directed to prepare and orbit an artificial satellite, in the wake of the launching of Sputnik by the Soviet Union, and the failure of the American Vanguard satellite. Explorer 1, the first U.S. artificial satellite, was launched on January 31, 1958.

In December 1958 JPL was transferred to the newly created National Aeronautics and Space Administration (NASA). In January 1959 JPL was assigned the responsibility for the robotic exploration of the moon and planets. Under Pickering's direction, JPL supervised the Ranger missions returning the first close-up, high-resolution pictures of the lunar surface; he also supervised the Surveyor soft-landers on the Moon; the Mariner missions to Mars and Venus; and the first gravity assist mission to Mercury, via Venus. JPL also designed the Viking Orbiters to Mars and designed and built the Voyager spacecraft for their mission to the outer planets.

After Pickering's retirement from JPL in 1976, he directed the Research Institutes of Saudi Arabia's University of Petroleum and Minerals. In 1978 he returned to California and established the Pickering Research Corporation for space related projects. In 1983, he formed Lignetics, Inc., to manufacture wood pellets from wood waste for use in home heating.

Pickering has received numerous national and international honors. For a complete list, please refer to the register for JPL 186, the William H. Pickering Office File Collection.

Provenance

The collection originated from Victoria L. Melikan, Special Assistant to the Director, Division 10. Twenty-four boxes of records were transferred from Melikan to the JPL Laboratory Records Center on June 11, 1976. There was a permanent withdrawal of three boxes in June 1983 and seven boxes in July 1990. The remaining materials were transferred to the JPL Archives in July 1990.

Collection Arrangement and Description

A majority of the collection consists of secondary reference materials such as journal and magazine articles, press releases, reports, and speeches, presumably gathered for and used by Pickering in his preparation of speeches and articles. Perhaps forty percent of the collection as a whole is correspondence, primarily referring to Pickering's activities in the American Institute of Aeronautics and Astronautics and the National Academy of Engineers.

The collection's original organization alphabetically by subject has been retained. The collection was originally composed of a cubic foot of foldered material with subject headings, and two cubic feet of unfolded items, primarily AIAA and NAE materials, grouped together with rubber bands. All were dated from 1959 to 1974, with bulk dates of 1965 to 1972.

The files on the American Institute of Aeronautics and Astronautics (AIAA) document Pickering's activities on the AIAA's Committee for Long-Range Planning, chaired by Edgar M. Cortright, at the time the Director of NASA's Langley Research Center. Pickering was also involved with the AIAA's Working Group on Philosophy, Science and Technology, with correspondence from James J. Harford, Executive Secretary of AIAA, and Leo Steg, Manager of the Space Sciences Laboratory at General Electric's Space Division.

Represented in the collection are a number of folders about the California Museum Foundation. Pickering was on the Board of Trustees of the Foundation, but rarely, if ever, attended Board meetings. He did make a speech, entitled "The Cult of Anti-Science," at the California Museum of Science and Industry in December 1971, which is represented in the collection.

Several speeches and papers written by others are represented in the collection, such as a Lee DuBridge article entitled "Policy and the Scientists," written for *Foreign Affairs*, present in the "Government, Science" folder. Also included in the same folder is an article by Al Hibbs entitled "The Scientific Advisor in Washington."

The "Grand Tour" folder includes the JPL Technical Report "The Determination and Characteristics of Ballistic Interplanetary Technology Trajectories Under the Influence of Multiple Planetary Attractions," written by Michael A. Minovitch, dated October 31, 1963. Also included are other reports involving the early concept of what would later become the Voyager missions to the Outer Planets.

Pickering also served on the Caltech Institute Administrative Council (IAC), whose duties included determining the hiring and granting of tenure to professors. Three folders of correspondence are devoted to this, along with general correspondence files and reports generated by the IAC.

Many of the articles in the collection are from such publications as *Science* or *Scientific American*. One example is the 1966 article from *Science* titled "A Comparison of U.S. and Soviet Efforts to Explore Mars," written by Bruce Murray and Merton E. Davies.

Many folders document Pickering's activities in the National Academy of Engineering (NAE), where he was a member of its Committee on Telecommunications. Included is correspondence with Peter C. Goldmark, President and Director of Research at CBS Laboratories. The NAE was also concerned with urban issues, such as environment, transportation, and crime deterrence. Many of the NAE files in the collection are related to such issues.

Of note in the files involving the National Academy of Sciences is a series of correspondence and articles involving Nobel laureate William Shockley of Stanford Electronics Laboratories. Shockley postulated a theory that intelligence and mental health were determined more by heredity than environment. He urged for research along the same lines within inner-city slums. Needless to say, this proved to be very controversial. Represented in the folder is a letter from Shockley to members of the National Academy of Sciences attempting to gain support for a resolution he was proposing to urge further study. Included are several attachments to the letter, including parts of journal articles, other correspondence and copies of newspaper articles. Also included are various articles that were entered into the *Congressional Record* by Representative Charles S. Gubser, Shockley's representative in Congress.

The folder titled "Progress in Space" contains several interesting items. There is a report titled "Why Can't the U.S. Match Russian Achievements in Space," dated November 10, 1959, written by Jack N. James. There are several other newspaper articles and entries in the *Congressional Record*, as well as a speech given by MIT professor H. Guyford Stever entitled "The Future of Aeronautics in the United States," dated January 27, 1965. There are also speeches by NASA Administrator James E. Webb and Edward C. Welsh, Executive Secretary of the National Aeronautics and Space Council, both in 1964. There is also a short reprint from *Leonardo*, written by Frank J. Malina, dated 1969.

The file labeled "Russian Space Programs" includes a translation from an article in *Pravda* in 1960 that gave a Russian gain of 240-1 against the United States in the weight of the "artificial planets" that had been launched. Also in the file are copies of newspaper articles reporting Pickering's remarks regarding the Russian space program at the World Newspaper Forum in October 1960.

The "Space Shuttle" folder includes a fact sheet and a statement from NASA Administrator James C. Fletcher involving the Shuttle program. The documents are undated but probably were created in 1972, soon after when the Shuttle gained Presidential endorsement and Congressional approval.

Conservation/Preservation

Standard preparations of documents for long term storage were completed.

Separation Statement

An original accession (1990-41) was split into three separate collections: the William H. Pickering Speech Reference Collection (this collection), William H. Pickering Speech Collection (JPL 181), and the William H. Pickering Office File Collection (JPL 186).

Finding Aids

No other finding aids exist for the collection.

FILE FOLDER LIST

Box 1 of 8

- Fld. 1 Air Pollution, 1969-1971.
- Fld. 2 Air Pollution, "The University and Environmental Research," Harold Brown, c, 1970.
- Fld. 3 American Institute of Aeronautics and Astronautics (AIAA), General Correspondence, January 1970-October 1971.
- Fld. 4 AIAA, Working Group on Philosophy, Science and Technology, December 1970-May 1971.
- Fld. 5 AIAA, Los Angeles Section Newsletters, April-June 1971.
- Fld. 6 AIAA Bulletin, May 1971-September 1972.
- Fld. 7 AIAA Long-Range Planning Committee, July 1971-March 1972.
- Fld. 8 Astronomy, 1961-1965.
- Fld. 9 The Bulletin of Arthur D. Little, Inc., 1972-1974.
- Fld. 10 California Museum Foundation, General Correspondence, 1969-1971.
[folder 1 of 2]
- Fld. 11 [folder 2 of 2]

Box 2 of 8

- Fld. 12 California Museum Foundation, Awards Banquet, May 8, 1969.
- Fld. 13 California Museum Foundation, Board of Trustees Meetings, January 1969-December 1971. [folder 1 of 2]
- Fld. 14 [folder 2 of 2]
- Fld. 15 California Museum Foundation, California Museum of the Sea Foundation, Status Reports, August 1970-May 1971.
- Fld. 16 California Museum Foundation, "The Cult of Anti-science," California Museum of Science and Industry, December 11, 1971.
- Fld. 17 Communications, 1964-1968.
- Fld. 18 Computers, n.d.
- Fld. 19 Creativity, 1964-1965.
- Fld. 20 Defense, Warfare, 1959-1965.
- Fld. 21 Electronics, Engineering, Physics, 1962-1966.
- Fld. 22 Engineering, Medical, n.d.
- Fld. 23 Extraterrestrial Life, 1964.

Fld. 24 Funding, 1959-1967.
Fld. 25 "The Future of Crime in the United States from Now to the Year 2000,"
Joseph F. Coates, *Policy Sciences*, 1972.
Fld. 26 Government, Science, 1963-1965.
Fld. 27 Grand Tour, 1963-1971.

Box 3 of 8

Fld. 28 Institute Administrative Council, Caltech, General Correspondence, 1970-
1972. [folder 1 of 2]
Fld. 29 [folder 2 of 2]
Fld. 30 IAC, Hirings and Promotions of Caltech Faculty, 1970-1972. [folder 1 of
3]
Fld. 31 [folder 2 of 3]
Fld. 32 [folder 3 of 3]
Fld. 33 IAC, Meeting Agendas, January 1971-June 1972.
Fld. 34 IAC, Reports, Miscellaneous, 1970-1972.

Box 4 of 8

Fld. 35 IAC, Budget Reports, 1970-1972.
Fld. 36 Intelligence and Emotions, 1965-1967.
Fld. 37 Magnetic Fields, 1965.
Fld. 38 Manned Space Flight, 1961-1967.
Fld. 39 Mars, 1966-1971.
Fld. 40 Melikan, Vicki L., 1968.
Fld. 41 Miscellaneous, 1964-1973.
Fld. 42 Miscellaneous, Pamphlets, 1963-1972.
Fld. 43 Miscellaneous, Article Reprints, 1961-1974.
Fld. 44 MITRE Corporation, Reports, 1971.
Fld. 45 The Moon, 1959-1970.
Fld. 46 National Academy of Engineering, Committee on Telecommunications,
General Correspondence, February 1970-October 1971. [folder 1 of 4]

Box 5 of 8

Fld. 47 [folder 2 of 4]
Fld. 48 [folder 3 of 4]
Fld. 49 [folder 4 of 4]
Fld. 50 NAE, Telecommunications Committee, Urban Relations, July 1969-
February 1971. [folder 1 of 2]
Fld. 51 [folder 2 of 2]
Fld. 52 NAE, Urban Issues, Broadband Cable Networks, October 28, 1969.
Fld. 53 NAE, Committee on Public Engineering Policy, "Priorities in Applied
Research: A Preliminary Report," December 15, 1969.
Fld. 54 NAE, Panel on Urban Communications, April 1970-March 1971.
Fld. 55 NAE, Panel on Urban Communications, "Urban Communications
Planning in England," Notes for a report by Alex Reid, June 16, 1970.
Fld. 56 NAE, Committee on Telecommunications, Seminar on the Wired City,
Ottawa University, June 25-28, 1970.

Box 6 of 8

Fld. 57 NAE, Committee on Telecommunications, Environment, July 1970-
January 1971.

- Fld. 58 NAE, Committee on Telecommunications, Report of the Panel on Urban Communications, August 1970.
- Fld. 59 NAE, Committee on Telecommunications, "Final Report of Telecommission 8d- Multiservice Cable Telecommunication Systems- "The Wired City"", October 3, 1970.
- Fld. 60 NAE, Urban Subpanel Chairmen Meeting, December 7, 1970.
- Fld. 61 NAE, Miscellaneous Reports, c. 1970.
- Fld. 62 NAE, Urban Panel Meeting, Working Papers, January 7, 1971.
- Fld. 63 NAE, Committee on Telecommunications, "Communications Technology for Urban Improvement," February 1971.
- Fld. 64 NAE, Committee on Telecommunications, Addendum to the Quarterly Report, March 10, 1971.
- Fld. 65 NAE, Committee on Telecommunications, Urban Dwelling Security Report, First Draft, J. J. O'Neill, March 24, 1971.
- Fld. 66 NAE, Committee on Telecommunications, Chapter II of Final Report, First Draft, April 1, 1971.
- Fld. 67 NAE, Committee on Telecommunications, Report, Communications Technology for Urban Improvement, First Draft, June 1971.

Box 7 of 8

- Fld. 68 NAE, Committee on Telecommunications Meeting, June 16, 1971.
- Fld. 69 NAE, IEEE Reports, August 1971.
- Fld. 70 National Academy of Sciences, General Correspondence, 1970.
- Fld. 71 National Academy of Sciences, William Shockley Correspondence, April-May 1970.
- Fld. 72 National Aeronautics and Space Act of 1958, Amended Through October 13, 1962.
- Fld. 73 John F. Naugle, "Suggested Remarks for John F. Naugle," William H. Pickering, c. 1968.
- Fld. 74 Power Engineering, 1970-1971.
- Fld. 75 Progress in Space, 1959-1970.
- Fld. 76 Public Opinion, 1960-1966.
- Fld. 77 Research, 1959-1965.
- Fld. 78 Rocket Technology, 1959-1965.
- Fld. 79 Russian Space Programs, 1960.
- Fld. 80 Solar Energy, 1971.

Box 8 of 8

- Fld. 81 Space Benefits, 1962-1969.
- Fld. 82 Space Education, 1958-1968.
- Fld. 83 Space Goals, 1960-1965.
- Fld. 84 Space Shuttle, 1972.
- Fld. 85 Speech Blocks, Space Benefits,
- Fld. 86 Tables and Fact Sheets, 1959-1968.
- Fld. 87 Technical Management, "U.S. Industry: Under New Management- A *Scientific American* Study," Gerard Piel, December 13, 1963.
- Fld. 88 Urban Issues, Sloan Commission on Cable Communications, Reports, August-September 1970.

CATALOG DESCRIPTION

William H. Pickering Speech Reference Collection, 1959-1974

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A majority of the collection consists of secondary reference materials such as journal and magazine articles, press releases, reports, and speeches, presumably gathered for and used by Pickering in his preparation of speeches and articles. Around forty percent of the collection as a whole is correspondence, primarily referring to Pickering's activities in the American Institute of Aeronautics and Astronautics and the National Academy of Engineers. The collection's original organization alphabetically by subject has been retained.

Finding aid available in the repository.

Tracings

Jet Propulsion Laboratory – History.

Jet Propulsion Laboratory – Office of the Director

National Aeronautics and Space Administration

American Institute of Aeronautics and Astronautics

California Museum Foundation

California Institute of Technology – Institute Administrative Council

Mariner Mars 1971

Mariner 9

Mars

Moon

National Academy of Engineering

Pickering, William H., 1910-

Melikan, Victoria L., 1928-

Brown, Harold, 1927-

DuBridge, Lee A., 1901-1994.

Hibbs, Albert R., 1924-

Minovitch, Michael A.

Murray, Bruce C., 1931-

James, Jack N., 1920-

Malina, Frank J., 1912-1981.

Cortright, Edgar M., 1923-

Harford, James J.

Steg, Leo

Dreyfuss, Henry

Coates, Joseph A.

Davies, Merton E., 1917-

Shoemaker, Eugene M., 1928-1997.

Goldmark, Peter C., 1906-

Mrozinski, R. V.

Reid, Alex

Shockley, William B., 1910-1989.

Gubser, Charles S, 1916-

Naugle, John F., 1923-

Stever, H. Guyford, 1916-

Webb, James E., 1906-1992.

Welsh, Edward C., 1909-

Hornig, Donald F., 1920-

von Braun, Wernher, 1912-1977.

Fletcher, James C., 1919-1991.
Piel, Gerard

Part of Accession 1990-41.